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TITLE--CONTEMPORARY STATE AND PROSPECTS FOR THE DEVELOPMENT OF THE PRODUCTION OF HEAT RESISTANT POLYMERS -U-

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF HEAT RESISTANT POLYMERS AND PROSPECTS FOR THE FUTURE DEVELOPMENTS IN THEIR PRODUCTION ARE DISCUSSED WITH 66 REFS.

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USSR K UDC 549.212

KOTOSONOV, A. S., DEMIN, A. V., POLOZHIKHIN, A. I., NIKOL'SKIY, I. F., and RAKCHEYEVA, V. I.

"Effect of Boron on Some Physical Characteristics of Artificial Graphites"

Moscow, Khimiya Tverdogo Topliva, No 3, May-Jun 70, pp 115-120

Abstract: The authors studied the effect of boron, introduced into the initial raw material (0.01-5.0 wt. percent), on some physical characteristics of graphite materials based on calcined petroleum coke, prepared by the thermomechanical treatment method. The attempt was also made to estimate the amount of boron dissolved in the graphite lattice and to establish the interrelationship between the amount of dissolved boron and the total content thereof, on the one hand, and certain physical properties of graphite, on the other. Specific electrical resistivity, magnetic resistance, Hall constant, X-ray diffraction parameters, compression strength and residual boron content were

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KOTOSONOV, A. S., et al., Khimiya Tverdogo Topliva, No 3, May-Jun 70, pp 115-120

measured on specimens, as well as relative deformation during thermomechanical treatment.

There was found to be an increase in the deformation of specimens during thermomechanical treatment and the density and mechanical strength of the material with an increase in the boron content. The structure of boronized graphite is characterized by increased crystallite size and reduced interlayer distance. The electron properties of the graphite depend mainly on the amount of boron dissolved in the lattice and replacing some of the carbon atoms.

It is shown on the basis of an analysis of the Hall constant that the limiting solubility of boron is limited to 1 percent with re-

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KOTOSONOV, A. S., et al., Khimiya Tverdogo Topliva, No 3, May-Jun 70, pp 115-120

spect to the ordered part of carbon. The rest of the boron is localized between the graphite crystallites in the form of carbide compounds. It is assumed that the increased strength of the graphite is due to the carbide phase of boron.

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Instruments and Measurements

UDC 621.317.73:621.365.6

ANTROPOV, B. A., ANTROPOVA, L. KH., MORGACHEVA, G. A., KOTOSONOV, N. V., SHUVAYEV, A. G., Voronezh State University, Gomel' State University

"Problem of Utilizing the Reluctance Effect to Measure Microwave Transmitting Power"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 9, 1972, pp 1393-1397

Abstract: The possibility of using reluctance sensors to measure the microwave transmitting power is discussed, and experimental results are presented for the voltage caused by the reluctance effect as a function of the transmitting power on a frequency of 9,370 megahertz. The reluctance sensor, just as the Hall sensor is an indicator of the microwave power flux density and is a transmitting power meter. There is a good linear relation between the output voltage taken from the sensor and the magnitude of the transmitting power and the readings from a specimen depend on its position relative to the open end of the wave guide which defines the point nature of the specimen, that is characterizes the dependence of its readings on the microwave power distribution and the low distortion introduced by the specimen into the microwave power distribution. Both the theoretical and experimental studies indicate the possibility of creating wattmeters based on reluctance sensors with the

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ANTROPOV, B. A., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 9, 1972, pp 1393-1397

following advantages over the power meters used at the present time: 1) low inertia connected with the fact that the relaxation time of the current carriers is $\sim 10^{-12}$ seconds as a result of which it is possible to use these devices to measure the pulse power; 2) low dissipated power in the sensor operating in the transmitting power mode which makes it possible to measure high power levels; 3) simplicity of the measuring circuit.

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USSR

UDC: 778.4

BAZARSKIY, O. V., KOTOSONOV, N. V., KHLYAVICH, Ya. L.

"Investigating a Holographic Method for Obtaining Visible Images of Phase Objects in the Microwave Range"

Moscow, Radiotekhnika i elektronika, No 8, 1972, pp 1733-1734

Abstract: Experiments described by the authors of this brief communication show how visible images of phase objects in the microwave range can be obtained by using the Cernik principle with full suppression of the zero-order spectrum -- i.e., the dark-field method. A block diagram of the equipment for doing this is reproduced and its operation explained. The radiation source in the apparatus was a backward wave tube, type OV-22, operating at a frequency of 125 GHz, and the object was a phase diffraction grating. A photograph of the restored image of the grating, as obtained by this method, is reproduced. The experiment demonstrates that it is possible to see phase objects with slight phase contrast in the microwave range.

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UDC: 778.4

KOTOSONOV, N. V., KHLYAVICH, Ya. L., KOLESNIKOV, A. I., EAZARSKIY, U. V., DUSHKIN, I. R., and VISLYANSKIY, A. G.

"Recording and Restoring Microwave Holograms With Gradations of the Interference Picture"

Moscow, Radiotekhnika i elektronika, No 8, 1972, pp 1731-1732

Abstract: The purpose of this brief communication is to compare the quality of images restored from binary and multigradation radioholograms in the optical range. A block diagram of the hologram recording equipment used for the experiments described in this paper is shown, and a description of its operation given. The radiation source used was a type OV-22 backward wave tube, with a frequency of 125 GHz. The method of processing the obtained recordings is described. For restoration, the hologram was photographically reduced and was then restored in the diverging beam of a helium-neon laser type LG-36A. Photographs of the object, its image restored by multigradation hologramming, and the image restored by binary hologramming, are reproduced for comparison. The experiment showed that while the resolving capability of binary and multigradation holography are the same,

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KOTOSCNOV, N. V., et al, Radiotekhnika i elektronika, No 8, 1972, pp 1731-1732

the quality of the restored image is better with the latter method.

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USSR UDC 621.373.826:772.99

KOTOSONOV, N. V., KHRILCHENKO, I. A., CHERNOV, YE. A.

"Application of Infrared CO_2 Lasers for Holography and Data Recording"

V sb. Ispol'z. optich. kvant. generatorov v sovrem. tekhn. i med. Ch. 2-3 (Utilization of Lasers in Modern Engineering and Medicine. Parts 2-3--collection of works), Leningrad, 1971, pp 57-59 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1D628)

Translation: A study was made of the possibility of using CO_2 lasers for high-speed data recording systems and for holography in the infrared range. It was proposed that thermo-optical structures with the thermal recording procedure be used as the media for recording radiation on a wavelength of 10.6 microns. The devices constitute an absorption receiver the operation of which is based on the dependence of the transparency of the semiconductor material for visible light on a certain wavelength on temperature. The semiconductor material is deposited in the form of a thin layer on a mica substrate which simultaneously serves as the infrared radiation absorber. It was demonstrated that for recording data arriving with a frequency of 1 megahertz, the required laser power for recording 100 micron spots must be ~1 watt. Self-erature of the recording ($\sim 10^{-1}$ seconds) provides for the operativeness of the given system. There is 1 illustration and a 3-entry bibliography.

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UDC 621.396.67

KOTOSONOV, N. V., KHLYAVICH, YA. L., BAZARSKIY, O. V., Voronezh State University

"Study of the Spatial Radiation Coherence of Some Superhigh Frequency Antennas"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 1, 1972, pp 150-152

Abstract: A study was made of the spatial coherence of the radiation of some superhigh-frequency antennas. The requirements on the radiators which are usually used to record radioholograms are defined. An analysis performed for quasimonochromatic superhigh-frequency sources with a coherent time much less than the observation time at each point demonstrated that application of horn antennas as radiators for recording radioholograms is inexpedient as a result of a a different degree of spatial coherence in the E and H planes. The highest degree of spatial coherence is noted in the case of lens antennas with bell-shaped field distribution in the aperture for sufficiently large values of β. However, as a result of a significant radiation intensity gradient of the object, distortion of the image can occur during reproduction. A lens antenna with cylindrical field distribution in the aperture [N. V. Kotosonov, et al., Trudy XXV Vsesoyuznoy nauchn NTO RES, Moscow, 1969] having a high degree of spatial coherence shapes uniform intensity distribution on 1/2

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KOTOSONOV, N. V., et al., Izvestiya vysshikh uchevnykh zavedeniy, Radiofizika, Vol XV, No 1, 1972, pp 150-152

object. Consequently, the application of the indicated radiator is most expedient when recording microwave holograms. The arguments and the formula obtained for the degree of spatial coherence at two points are valid only for the case of location of the analysis region in the Fresnel zone where the radiation source is elongated relative to the points of measuring the spatial coherence.

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UDC 621.382

KOTOSONOV, NIKOLAY VASIL'YEVICH

"Use of Physical Phenomena in Semiconductors for Analysis of Fine Structure of a Microwave Field (Selection of Problems of Microwave Semiconductor Electronics)"

Ispol'zovaniye fizicheskikh yavleniy v poluprovodnikakh dlya analiza tonkov struktury SVCh-Polya: Izbrannyye voprosy poluprovodnikovoy elektroniki SVCh (cf. English above), Voronezh, Izd-vo Voronezhskogo Universiteta, 1971. 119 pp. 44 fig. 4 tab. 15 ref.

Abstract: The work is devoted to an analysis of current methods of investigating the structure of a microwave electromagnetic field and also to an explanation of the prospects for use of galvanomagnetic, thermal, and photoelectric phenomena in semiconductors for solution of analogous problems. Theoretical computations, a description of experimental equipment, and the results of investigations of the structure of a microwave electromagnetic field are presented. The book is intended for students of advanced courses specializing in the field of electronics, and graduate students and engineers working in the field of microwave semiconductor electronics.

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KOTOSONOV, NIKOLAY VASIL'YEVICH, Ispol'zovaniye fizicheskikh yavleniy v poluprovodnikakh dlya analiza tonkoy struktury SVCh-Polya: Izbrannyye voprosy poluprovodnikovoy elektronaka SVCh, Voronezh, Izd-vo Voronezhskogo Universiteta, 1971. 119 pp, 44 fig. 4 tab. 15 ref.

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KOTOSONOV, MIKOLAY VASIL'YEVICH, Ispol'zovaniye fizicheskikh yavleniy v poluprovodnikakh dlya analiza tonkoy struktury SVCh-Polya: Izbrannyye voprosy poluprovodnikovoy elektronaka SVCh, Voronezh, Izd-vo Voronezhskogo Universiteta, 1971. 118 pp, 44 fig. 4 tab. 15 ref.

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KOTOSONOV, NIKOLAY VASIL'YEVICH, Ispol'zovaniye fizicheskikh yavleniy v poluprovodnikakh dlya analiza tonkoy struktury SVCh-Polya: Izbrannyye voprosy poluprovodnikovoy elektronaka SVCh, Voronezh, Izd-vo Voronezhskogo Universiteta, 1971, 119 pp, 44 fig. 4 tab. 15 ref.

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USSR

UDC 621.372.855

KOTOSONOV, N. V., IVANOV, V. N., SIDORKIN, A. F., ARTEMOV, R. S.

"Optically Controllable Semiconductor Waveguide Load"

Tr. Voronezh. un-ta (Works of Voronezh University), No 77, 1971, pp 11-18 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10B165)

Translation: The reflection of electromagnetic energy from a semiconductor-dielectric-metal structure was investigated theoretically. The relation of the reflected power to the conductance of the semiconductor material was obtained. The possibility of using this effect to create an optically controllable load for waveguide channels was demonstrated, and an experimental estimate of its parameters was made. There are 5 illustrations and a 2-entry bibliography.

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UDC 621.317.373.538.632

KOTOSONOV, N. V., KHLYAVICH, YA. L., ZVEREV, G. F., RADZIYEVSKIY, V. G., GLAUBERMAN, A. S.

"Phase-Sensitive Detector with a Superhigh-Frequency Hall Data Unit"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 946-947

Abstract: A study is made of the operation of phase sensitive detectors based on superhigh-frequency Hall data transmitters. Measurements were taken at a frequency of 600 megaHertz and the basic part of the measurement unit was a coaxial magnetic field resonator-concentrator. The dependence of the constant component of the Hall voltage on the phase shift angle and also the estimation of the linearity of the characteristic with respect to both components were studied. When measuring the linearity of the characteristic and its dynamic range, fixed attenuators were included in the measured or reference channel, and the results of these measurements are presented in graphical form. The linearity of the Hall data unit characteristic as a function of the magnetic field intensity and current in the dynamic range of no less than 30 decibels was experimentally confirmed. The experimental range was limited by the sensitivity of the indicator and the power of the generator considering attenuation in the decoupling elements and it is not limiting.

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UDC 621.317.78.023

KOTOSONOV, N. V., DUDKIN, V. P., PETROV, YU. M.

"Some Means of Improving the Sensitivity of a Superhigh Frequency Power Indicator by Using the Hall Effect"

Tr. Voronezh. un-ta (Works of Voronezh University), 1971, No 77, pp 44-49 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10A179)

Translation: A study was made of the basic characteristics of a superhigh frequency power indicator in the Hall effect and certain means of improving its sensitivity. The theoretical possibility of improving the sensitivity of the wattmeter in the Hall sensor using a ring resonator is demonstrated. Results are presented from an experimental study of the sensitivity of the cooled Hall sensor in the superhigh frequency range. There are 3 illustrations and a 5-entry bibliography.

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USSR UDC: 621.385:530.145.6.77

KOTOSONOV, N. V., KHRIPCHENKO, I. A., CHERNOV, Ye. A., SVIRIDOVA, O. A.

"Resolution of Thermoholograms"

V sb. Radiofiz. i mikroelektronika (Radio Physics and Microelectronics--collection of works), Voronezh, 1970, pp 40-46 (from RZh-Radiotekhnika, no 6, Jun 71, Abstract No 6D421)

Translation: The paper deals with recording devices (thermoholograms) on which the exposing irradiation is recorded in the form of a temperature relief which reproduces the distribution of the irradiating flux intensity. The operating principle of the thermogram is based on the transparency of the material as a function of temperature. The device consists of a heat-sensing element (thermoplate) which absorbs the exposing irradiation, and a thin semiconductor film which is in thermal contact with the thermoplate. With a change in temperature, the long-wave edge of the absorption band is displaced. If radiation from an auxiliary transilluminator source with a wavelength close to the edge of the absorption band is sent through this layer, the intensity of the emission after passing through the layer will depend on the position of the absorption band, and hence on the tem-

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KOTOSONOV, N. V. et al., Radiofiz. i mikroelektronika, Voronezh, 1970, pp 40-46

perature of the layer. For a semiconductor layer with linear temperature dependence of the displacement, the process of restoration of the wave front from the thermohologram is analogous to restoration from amplitude holograms on photographic emulsions. The resolution of a thermogram is evaluated, and its value is calculated for a device in which the thermoplate is "Muscovite" mica, while the semiconductor plate is a selenium layer vaporized onto the mica substrate. A. K.

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UDC: 538.56:621.372.8

USSR

VLASOV, B. I., KOTOSONOV, N. V., DRONOVA, V. S., P'YANYKH, Yu. M., Voronezh State University

"Using Metal-Semiconductor Film Structures to Study the Diffraction Fields of Plane Nonhomogeneities in a Waveguide"

Moscow, Izvestiya Vysshykh Uchebnykh Zavedeniy: Radiofizika, Vol 13, No 10, 1970, pp 1532-1540

Abstract: The authors solve the problem of type $H_{0\,1}$ wave diffraction in a rectangular waveguide by a central inductive strip and a metal-semiconductor thin film. It is shown that the diffraction field of the inductive strip is not significantly distorted by introducing a matched multilayered structure. Deviation of the temperature relief patterns from the law of distribution of the induced currents in the absorbing film because of spreading of the thermal field decreases with an increase in the parameter $k = 2\pi/\lambda$ and in the modulation frequency F. A theoretical and experimental basis is given for the possibility of utilizing the distributed matched load method (N. V. Kotosonov, B. I. Vlasov, IVUZ Radiofizika, Vol 11, No 2, p 311 [1968]) with metal-semiconductor thin films for studying diffraction fields in a waveguide.

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UDC: 621.317.77:538.632

USSR

KOTOSONOV, N. V., KHLYAVICH, Ya. L., ZVEREV, G. F., RADZIYEVSKIY, V. G., GRAUBERMAN, A. S.

"On the Possibility of Constructing a Phase Meter With Direct Readout Based on a Hall Pickup for the SHF Range"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 95-96 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A328)

Translation: It is pointed out that when a Hall pickup is subjected to a harmonically varying current and a magnetic field, a constant EMF is developed across the Hall leads which is proportional to the cosine of the angle of phase displacement between the vectors of current and magnetic field strength. This emf may serve as a measure of the phase displacement, and is convenient for purposes of indication. The feasibility of building a phase meter based on this principle is checked out on a frequency of 600 MHz. A schematic diagram of the installation is presented. The difference between theoretical and experimental data is no more than 5 percent. Ambiguity in the phase angle reading may be eliminated by including a small

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KOTOSONOV, N. V. et al., Dokl. Vses. nauchno-tekhn. konferentsii po radio-tekhn. izmereniyam. T. 2, Novosibirsk, 1970, pp 95-96

elongating insert in the measurement channel. Possible systematic errors (thermo-emf etc.) can be completely compensated. B. L.

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USSR

UDC 621.396.666(088.8)

KOTOUSOV, A. S., SERGEYEVA, N. I., TUBAL'TSEV, V. G.

"Device for Separating a Signal Against a Background of Focused Noise"

USSR Author's Certificate No 296214, filed 15 Nov 1968, published 9 Apr 1971 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1D623)

Translation: A device is introduced for separating a signal against a background of focused noise executed in the form of a rejector filter tuned to the middle frequency of the noise spectrum with automatic regulation of the transmission coefficient by means of, for example, a regulatable resistor. For approximation of the noise proofness of the signal reception against a background of fading focused noise close to optimal, the input of the device is connected to the servomechanism of the resistor via a narrow band filter which separates the noise and a rectifier. The uniformity of the spectral density of the noise power at the output of the device is insured by selection of the resonance resistance of the rejector filter and the limits of variation of the regulatable resistor from the relation $(R_{oe} + R)/R > 3-4$ where R_{oe} is the resonance resistance of the rejector filter, and R is the resistance of the regulatable resistor.

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USSR UDC 621.396.666

KOTOUSOV, A. S., SERGEYEVA, N. I., TUBAL'TSEV, V. G.

"A Device for Isolating a Signal Against a Background of Lumped Interference"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296214, division E, filed 15 Nov 68, published 12 Feb 71, p 179

Translation: This Author's Certificate introduces a device for isolating signals against a background of lumped interference. The device is made in the form of a band-elimination filter tuned to the middle frequency of the interference spectrum with automatic regulation of the transmission factor by some such means as a controlled resistor. As a distinguishing feature of the patent, the device is designed to bring the interference resistance of signal reception against a background of lumped attenuating interference close to the optimum. The input of the device is connected to the controlling element of the resistor through a narrow-band filter which isolates interference, and through a rectifier. The spectral density of the interference power at the output of the device is kept uniform by selecting the resonance resistance of the band-elimination filter and the range of variation of the controlled resistor to satisfy the relationship

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KOTOUSOV, A. S., et al., Otkrytiya, izobreteniya, promyshlennyye obraatsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296214, division H, filed 15 Nov 68, published 12 Feb 71, p 179

$\frac{R_{oe}+R}{R} > 3-4$, where R_{oe} is the resonance resistance of the band-elimination filter, and R is the resistance of the controlled resistor.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC: 535.373.2

BORISEVICH, N. A., KOTOV, A. A., and TOLSTOROZHEV, G. B.

"Radiationless Transition of Electronic Energy in Monatomic Molecules"

Moscow, Izvestiya AN SSSR -- Seriya Fizicheskaya, vol 36, No 5, 1972, pp 935-940

Abstract: Special attention is given in this paper to the triplet-triplet transfer of energy of excitation in organic compound vapors, a subject that has been relatively neglected in the literature although it has been studied in detail in relation to condensed media. Because few materials phosphoresce with much intensity in the gaseous phase, the choice of energy donors that can be conveniently studied is difficult. In their experiments, however, the authors used diacetyl donors; the quantum interconversion output for this material in long-wave absorption excitation is close to unity. Anthracene, 9.10 dimethylanthracene, 9.10 diphenylanthracene, and pyrene were used to supply acceptor energy. Tables of the characteristics of these materials are given. In shortwave excitation, the quantum output of the intercombination conversion is found to drop. This indicates that an additional process of highly effective radiationless degradation of the electronic energy is at work without the participation of the lower

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UDC: 535.373.2

BORISEVICH, N. A., et al, Izvestiya AN SSSR -- Seriya Fizicheskaya, vol 36, No 5, 1972, pp 935-940

triplet state. The authors are associated with the Physics Institute of the Belorussian Academy of Sciences.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR UDC 621.3.049.75

KATSMAN, S. A., KOTOV, A. A.

"A Method of Making Printed-Circuit Board Drawings"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 2, Jan 71, Author's Certificate No 290488, division H, filed 19 Apr 68, published 22 Dec 70, p 169

Translation: This Author's Certificate introduces a method of making printed-circuit board drawings, using a photocontact process to make a negative on reversal paper and a positive on photosensitive film. As a distinguishing feature of the patent, in order to cut down the work involved in planning printed-circuit boards, the original drawing of the printed circuit board is made by combining a photographic original and a drawing mask carrying all dimensions and the required technical specifications.

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USSR UDC: 535.373.2

BORISEVICH, N. A., Academician Belorussian Academy of Sciences, and KOTOV, A. A.

"Quenching of Anthraquinone and Benzophenone Vapor Luminescence in Large-Quanta Excitation"

Minsk, Doklady Akademii Nauk BSSR, Vol. 14, No. 9, 1970, pp 798-801

Abstract: The quantum output and the luminescence duration of anthraquinone and benzophenone vapors as functions of the frequency of the exciting radiation are considered. A plot of the results of this experimental work with two ordinates, one for the relative quantum output and the other for the absorption spectra of the vapors, and a single abscissa, for the frequency, is given. The output quanta were measured by a method described in an earlier paper (Borisevich, N. A., Abstracts of Candidates' Theses, Leningrad, 1954). The excitation radiation was supplied by mercury lamp SVD-120 in the 248-405 nm range for the anthraquinone and 248-365 nm for the benzophenone. A diffraction monochromator was used to detect the mercury lines. The xenon lamp IFP-800, fed

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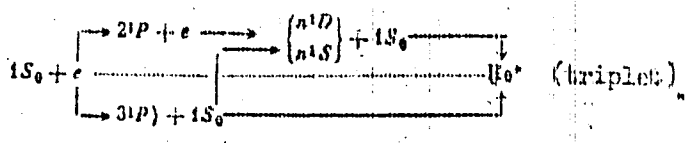
USSR

VASILENKO, L. S., et al., Optika i Spektroskopiya, Vol 28, No 6, Jun 70, pp 1085-1093



The authors thank G. A. MIKUSHKIN And YU. A. RAKOV for their assistance in the experiments.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/3 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--LONG TERM LUMINESCENCE OF VAPORS OF COMPLEX MOLECULES -U-

AUTHOR-(03)-BORISEVICH, N.A., GRUZINSKIY, V.V., KOTOV, L.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 490-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--LUMINESCENCE SPECTRUM, ANTHRAQUINONE, BENZENE DERIVATIVE, AROMATIC KETONE, PHOSPHORESCENCE, EXCITED STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0939 STEP NO--UR/0048/70/034/003/0490/0498

CIRC ACCESSION NO--AP0134664

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/3 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134664

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TIME DEPENDENCE OF THE LUMINESCENCE OF ANTHRAQUINONE I, PH SUBZ CO II, 4,PHENYLBENZOPHENONE III, AND BENZANTHRONE IV WAS STUDIED. THE LUMINESCENCE AND ABSORPTION SPECTRA OF THE COMPDS. UNDER STUDY ARE SHOWN, AND AN APPROX. ENERGY LEVEL DIAGRAM BASED ON LITERATURE DATA AND EXPTL. RESULTS IS GIVEN. THE VAPOR LUMINESCENCE OF I AND II AT HIGH CONCNS. CONTAINED 2 COMPONENTS WITH COINCIDING SPECTRA. THE LONG LIVED COMPONENT, REPRESENTED BY ALPHA PHOSPHORESCENCE, WAS PREDOMINANTLY RESPONSIBLE FOR THE OVERALL LUMINESCENCE. THE LUMINESCENCE SPECTRUM WAS INDEPENDENT OF THE FREQUENCY OF EXCITATION. THE CONTRIBUTION OF THE SHORT LIVED COMPONENT TO EMISSION WAS LESS THAN OR EQUAL TO 5PERCENT. THE ABSORPTION AND LUMINESCENCE SPECTRA OF VAPORS OF III WERE CLOSELY RELATED TO THOSE OF II. THE PH RADICAL CAUSED THE PI PI SEXTILE ABSORPTION BAND TO SHIFT TOWARDS LONGER WAVELENGTHS. SIMILARLY TO I AND II, THE LUMINESCENCE SPECTRUM OF III WAS INDEPENDENT OF THE FREQUENCY OF EXCITATION; IT SHOWED, HOWEVER, THE TEMP. DEPENDENCE COMMON IN THE LUMINESCENCE OF VAPORS. THE LUMINESCENCE INTENSITY CHANGED PROPORTIONALLY TO THE INTENSITY OF EXCITATION. A STUDY OF THE DEPENDENCE OF THE QUANTUM YIELD AND DURATION OF THE VAPOR LUMINESCENCE OF I, II, AND III ON TEMP. AND THE FREQUENCY OF EXCITATION ALLOWED ONE TO VERIFY THE THEORETICAL CONCEPTS OF THE LONG TERM VAPOR FLUORESCENCE OF THE COMPDS. UNDER STUDY. THE LUMINESCENCE SPECTRUM OF THE VAPORS OF IV SHOWED 2 BANDS WHEREAS A SINGLE BAND WAS OBSD. IN SOLN.

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3/3 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--\P0134664

ABSTRACT/EXTRACT--THE LONG WAVE BAND IN THE VAPOR LUMINESCENCE REPRESENTED BETA PHOSPHORESCENCE WITH A DURATION OF 7 TIMES 10 PRIME NEGATIVE4 SEC, AND THE LOWEST EXCITED SINGLET AND TRIPLET STATES OF IV WERE THE PI PI SEXTILE STATES. CONTRARY TO I, II, AND III, AN INTENSE LUMINESCENCE OF SOLNS. OF IV AND SEVERAL OF ITS DERIVS. WAS OBSD. AT AMBIENT TEMP.

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USSR

UDC 539.173.3

KOMAR, A. P., Academician of the Academy of Sciences Ukrainian SSR, BOCHAGOV, B. A., KOTOV, A. A., SERENCHUK, G. G., and SOLYAKIN, G. YE., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences USSR, Leningrad

"Nucleonic Composition and Excitation Energies of Fissioning Nuclei in Irradiation of Bi-209, Pb-208, and Au-197 Targets With Photons With Energy $E_{\gamma max}$ = 1 Gev"

Moscow, Doklady Akademii Nauk SSSR, Vol 190, No 6, 1970, pp 1308-1311

Abstract: The authors determine the nucleonic composition A,Z and excitation energy E_{exc} of fissioning nuclei by using data on fission product characteristics, particularly the effect of a decrease in the kinetic energy of fragments with the escape of neutrons from them and the calculation of the mass and energy distributions of fragments at a given nucleus temperature. The article uses results relating only to light Bi-209 and Au-197 target nuclei, cited in an earlier

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KOMAR, A. P., et al., Doklady Akademii Nauk SSSR, Vol 190, No 6, 1970, pp 1308-1311

article by the authors, as well as new data for a Pb-208 target and refined data for an Au-197 target calibrated according to Cf-252 fragments. The initial formula for the authors' calculations was the Seaborg-Viola formula for the mean kinetic energy of fragments E_K^i prior to escape of neutrons from them.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC 77

BRESLAV, YU. A., KOTOV, A. G.

"EPR in Photoemulsion Crystals of Silver Bromide"

V sb. Mezhdunar. kongress po fotogr. nauke, Moskva, 1970, Prirooda fotogr. chuvstvitel'nosti (International Congress on Photographic Science, Moscow, 1970, Nature of Photographic Sensitivity -- Collection of Works), no place of publication given, Vneshtorgizdat, no year given, pp 135-138 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1323)

Translation: The EPR at different stages in the chemical aging of ammonium AgBr emulsion was investigated after gamma-irradiation from a Co^{60} source in air or in a vacuum at -196°C. Components belonging to NO_2 molecules absorbed on the surface of microcrystals, NO_3^- paramagnetic particles, and O_2^- ion radicals were identified in the EPR spectrum. If $AgIO_3$ is replaced by $AgClO_3$ in the synthesis of AgBr, a component corresponding to the ClO_3 radical appears instead of components corresponding to NO_2 and NO_3^-. O_2^- adsorbed on the surface displayed the capacity to compete with sensitivity centers and other electron showers and

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BRESLAV, YU. A., KOTOV, A. G., Mezhdunar. kongress po fotogr. nauke, Moskva, 1970, Priroda fotogr. chuvstvitel'nosti, no place of publication given, Vneshtorgizdat, no year given, pp 135-138

even to keep electrons localized by these centers In the adsorption of oxygen after irradiation. The role of surface admixtures is thus very considerable in electron processes in the irradiation of microcrystals. The EPR spectrum also displayed two components associated with two types of paramagnetic particles, the concentrations of which (especially of one type) decrease during aging; they are possibly charge carriers stabilized on the surface. A. L. Kartuzhanskiy.

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Acc. Nr: AP0048380 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: 71R0456

K

104230c Surface centers of γ-irradiated silica gel. EPR study of the effect of oxygen and nitric oxide adsorption. Lyubimova, O. I.; Kotov, A. G. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). *Khim. Vys. Energ.* 1970, 4(1), 62–7 (Russ). The effect on the EPR spectrum of adsorption of NO and O on γ-irradiated silica gel is studied for 3 different gels. Electrons and holes are formed both in the vol. and on the surface of the gel. Adsorption values are given for the surface centers. When O is adsorbed O_2^- is present. B. J. Ikeler

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

Acc. Nr: AP0045522 Abstracting Service: CHEMICAL ABST. Ref. Code: UR0456

89521c Effect of the unshared pair of nitrogen atom electrons on the photochemical properties of radicals in irradiated amines. Kotov, A. G.; Pukhal'skaya, G. V.; Pshezhetskii, S. Ya. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). Khim. Vys. Energ. 1970, 4(1), 93-5 (Russ). ESR spectra of radicals formed by irradn. of some alkylamine hydrochlorides are described. The radicals formed from $MeNH_3.HCl$ are decompd. by uv light. Photochem. stable ion radicals $\cdot CH_2NH_2^+Me$ (I), $Me_2NH^+CH_2\cdot$ (II), $\cdot CH_2CH_2NH_3^+$ (III), and $\cdot CH_2CH_2NH_2^+Et$ (IV) are formed from corresponding amine hydrochlorides. By irradn. of Me_2NNHCl and Me_3NHCl ion radicals $\cdot CH_2NH_2^+$ are formed. No diminution of the ESR signal is obsd. when samples contg. I, II, III, and IV are irradiated by uv light of wavelength >200 nm. The absorption region of these ion radicals is <200 nm, whereas corresponding radicals which possess the unshared electron pair on N absorb light below 450 nm.

J. Sedlar

REEL/FRAME
19780490

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

Acc. Nr: AP0049941 Abstracting Service: CHEMICAL ABST. 5-10 Ref. Code: UR 0456

104231d Photodissociation of alcohols adsorbed on γ-irradiated silica gel. Shamonina, N. F.; Kotov, A. Ya.; Pshezhetskii, S. Ya. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). *Khim. Vys. Energ.* 1970, 4(1), 43-8 (Russ). The EPR spectra are shown and analyzed for γ-irradiated silica gel (sp. surface 400 m²/g) washed with Et orthosilicate, dried, and heated at 400° for 6 hr at 10^{-4} torr with adsorbed EtOH, MeOH, or PrOH under the effect of red light. The photodissocn. of the alcs. takes place at surface paramagnetic centers, formed during irradn. of the silica gel. The relation is shown between Et and Me radicals and dose, and increases up to 1.0 megarad before leveling off. A diagrammatic sketch is shown relating the energies of recombination of stabilized electrons and "holes."

B. J. Ikeler

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REEL/FRAME 19801877

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

12 Radiation Chemistry

UDC: 541.15

USSR

BRESLAV, YU. A. and KOTOV, A. G., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov, Moscow, State Committee for Chemistry

"Paramagnetic Centers in Irradiated Synthetic Zeolites"

Moscow, Khimiya Vysokikh Energiy, Vol 4, No 2, 1970, pp 149-153

Abstract: The present study was intended to supplement earlier research showing that it is surface F- and V-centers resulting from gamma-radiation which support low-temperature radiation-catalytic conversion of molecules adsorbed on zeolites. LiA, NaA, KA, RbA, CsA, CaA and SrA, irradiated at 77 and 300°K, were used in the study of paramagnetic centers, the samples being conditioned in vacuo at various temperatures between 600 and 1,000°K. Also studied was the adsorption of paramagnetic nitrous and nitric oxides on both irradiated and unirradiated samples. It was established that replacement of an alkali metal cation with an alkali-earth cation leads to sharp alteration in surface properties: the donor electron levels of the surface defects in such replacement are converted into acceptor levels. These properties remain present when defects have been altered as a result of heat treatment, and also with change in radiation temperature.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--PARAMAGNETIC CENTERS IN IRRADIATED SYNTHETIC ZEOLITES -U-

AUTHOR-(02)-BRESLAV, YU.A., KOTOV, A.G.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 149-53

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--PARAMAGNETISM, ZEOLITE, GAMMA RADIATION, EPR SPECTRUM, HIGH TEMPERATURE EFFECT, CALCIUM, STRONTIUM, CATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0758 STEP NO--UR/0456/70/004/002/0149/0153

CIRC ACCESSION NO--AP0119665

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2/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119665

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE ACTIVATION TEMP. (T SUB1) AND THE TEMP. OF GAMMA,IRRADN. OF MA ZEOLITES, M EQUALS LI, NA, K, RB, CS, CA, AND SR, ON THE EPR SPECTRA OF PARAMAGNETIC CENTERS WAS STUDIED BY A METHOD DESCRIBED PREVIOUSLY (BRESLAU, ET AL., 1967). A CHANGE IN T SUB1 OF 350-550DEGREES DID NOT AFFECT THE NO. OF CENTERS NOR THE FORM OF THE SPECTRUM OF NAA IRRADIATED AT 770EGREESK. AT HIGHER TEMPS., SMALLER THAN OR EQUAL TO 750DEGREES, THE NO. OF CENTERS INCREASED, BUT THE SPECTRUM DID NOT CHANGE. AFTER IRRADN. AT ROOM TEMP., THE EPR SPECTRUM CONSISTS OF 6 COMPONENTS. THE G,FACTOR AT THE INTERSECTION WITH THE ZERO LINE WAS 2.020 PLUS OR MINUS 0.0005 OE. ADSORPTION OF NH SUB3 OR O DID NOT AFFECT THE INTENSITY OF THE SPECTRA. THE SPECTRA OF CAA AND SRA IRRADIATED AT ROOM TEMP. AND ACTIVATED AT 400-50DEGREES CONSIST FO 2 SUPERIMPOSED SIGNALS, 1 OF WHICH IS A SINGLE LINE, 3-4 OE WIDE. ADSORPTION OF N OXIDES LOWERED THE NO. OF V CENTERS, BUT DID NOT AFFECT THE SPECTRA. EXCHANGE CATIONS M AFFECTED THE SURFACE PROPERTIES OF MA ZEOLITES IN THAT DONOR ELECTRON LEVELS OF SURFACE DEFECTS BECAME ACCEPTOR LEVELS. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

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KOTOV, A.I.

MEDICINE

VITAMIN C CONTENT IN THE MAIN DIETETIC MENUS

Vegetable soups	11, 15	6	46	73
Vegetable soup	17	12	90
Vegetable soup	1,6,20	16	47	78
Vegetable soup	5,8,19	6	53	71
Potato puree	2,10,11	15	79	88

Remark: The examinations were made at noon after the preparation of the dish.

It can be seen from the table that in nutrient meat bouillon and in vegetarian soups) the vitamin the smallest, although in individual cases they able stores, and exceed the generally accepted minimum (75%). In puree-shaped potato and pr

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USSR UDC 632.95

TERENT'YEV, A. P., GRABLYAYUSKAS, K. V., and KOTOV, A. L.

"Method of Production of N',N'-Dimethylhydrazide of Succinic Acid"

USSR Author's Certificate No 309004, filed 6/02/70, published 29/09/71; (Translated from Referativnyy Zhurnal, Khimiya, No 9, 1972, Abstract No 9 N590 P by T. A. Belyayeva).

Translation: Four-hundred point three g of succinic anhydride is added to the mixture of 600 ml CCl_4 and 100 ml DMPA, then a solution of 240.4 g Me_2NNH_2 in 300 ml CCl_4 is added over 30-60 minutes at 20-30° (cooled with ice and salt to maintain the temperature), the mixture is stirred for 2 hours at ~20°. The precipitate is separated, washed with CCl_4, suspended in 1.2 l iso-PrOH, boiled for 30 minutes, cooled to 0°, filtered, the precipitate is washed with iso-PrOH and ethyl acetate, and dried, producing succinic acid N',N'-dimethylhydrazide, yield 85.8-90.8%. IR spectra are presented.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC: 669.11.24.71:538

KOTOV, A. P., ZELENIN, L. P., BRONFIN, B. M., SIDORENKO, F. A., GEL'D, P. V.,
Ural Polytechnic Institute imeni S. M. Kirov

"Structure and Magnetic Properties of Mutual Solid Solutions of Iron and Nickel Monoaluminides"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 3, Mar 72, pp 602-606

Abstract: The lattice period, density, and temperature dependence of susceptibility of solid solutions of $Fe_{1-x}Ni_xAl$ ($0 \leqslant x \leqslant 1$) are measured, and their energy spectrum is discussed. The curve for the lattice period as a function of composition shows anomalous behavior: the lattice period decreases linearly with increasing x from approximately 291 pm for iron monoaluminide to 288.7 pm for 50 mol.% NiAl, remaining constant above $x = 0.5$. The temperature-dependent part of susceptibility in the intermetallic compounds is attributed to iron atoms. The concentration dependence of the properties of mutual solid solutions of iron and nickel monoaluminides is explained in terms of redistribution of electron densities.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC 612.822.3

SUDAKOV, K. V., ZHURAVLEV, B. V., and KOTOV, A. V., Chair of Normal Physiology First Moscow Medical Institute imeni I. M. Sechenov

"Neurophysiological Mechanisms of Sensory Satiation"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 1, Jan/Feb 73, pp 24-33

Abstract: Liquid food (milk or carrot juice) was gently sprayed over the oral mucosa and, through a gastric tubing, injected into the stomach of hungry, anesthetized cats and rabbits, while EEG's were being recorded from the cerebral cortex and various hypothalamic areas. On the basis of the results obtained, the following theory was formulated. In the hungry state, the lateral hypothalamus is active and discharges impulses to the motor and sensory cortex and to the ventromedial hypothalamic nucleus, increasing the sensitivity of these structures to afferent impulses from oral and gastric receptors. When stimulated by food, these receptors discharge afferent impulses primarily to the ventromedial nucleus, whose activity thus gradually increases with the intake of food. At the same time, progressive inhibition takes place in the lateral hypothalamus and brain cortex. Eventually, excitation of the ventromedial nucleus, which functions as the satiation center, and inhibition of the lateral hypothalamus, which functions as the hunger center, create a state of sensory

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USSR

SUDAKOV, K. V., et al., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 1, Jan/Feb 73, pp 24-33

satiation which stops food intake before the food present in the gastrointestinal tract is digested, absorbed, and distributed, that is, before metabolic satiation is reached.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC 681.325.63

KOTOV, B. A., SURAMANOV, R. F., Institute of Semiconductors, Academy of Sciences of the USSR, Leningrad

"An Analog-Code Converter"

Moscow, Pribory i Tekhnika Eksperimenta, No 4, Jul/Aug 71, pp 97-99

Abstract : The authors describe a voltage-to-code converter based on integrated circuits. The device can be used to convert continuous deterministic and stationary random signals to digital code with punch-tape output, which enables use of digital and control computers both for optimum processing of physical data and for controlling a complex physical experiment. The converter quantizes continuous signals by level with a precision of 0.1 percent. Maximum conversion time is 1 ms, input impedance is 20 kΩ. The converter can be used in the digital integration mode, which makes it possible to estimate the mathematical expectation of a stationary random process.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC: 621.376.232.2

ABDURAKHMANOV, K. P. and KOTOV, B. A.

"Sensitive Synchronous Detector"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 127-128

Abstract: The difficulty involved in the design of transistorized synchronous detectors is finding transistors for switching with small temperature drift. The circuit described in this article uses integrated microcircuits capable of operating in a broad band of frequencies with narrow temperature drift; it consists of a transistor-analog multiplier, an integrating amplifier, and an emitter follower. The multiplier is an integrated circuit, P2222 type, and a hybrid 1OMD1O or 1MM6. A description of the circuit's operation together with a schematic of the entire instrument is provided. It has been successfully used to observe small nonlinearities in the volt-ampere characteristics of tunnel structures. The authors are associated with the Institute of Semiconductors, USSR Academy of Sciences, Leningrad.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--OBSERVATIONS OF TRANSPORT PHENOMENA AND OF ATOMIC MOTION IN THE LIQUID PHASE -U-
AUTHOR-(05)-REGEL, A.R., ANDREEV, A.A., KOTOV, B.A., MAMADALIEV, M., OKUNEVA, N.M.
COUNTRY OF INFO--USSR

SOURCE--J. NON-CRYST. SOLIDS 1970, 4(1) 151-60

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--GALLIUM, TRANSPORT PHENOMENA, FLUID STATE, ATOMIC PROPERTY, THERMAL CONDUCTIVITY, NEUTRON SCATTERING, SELENIDE, INDIUM COMPOUND, COPPER COMPOUND, SOLID STATE, ANTIMONY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/0364 STEP NO--NE/0000/70/004/001/0151/0160

CIRC ACCESSION NO--AP0100850
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100850

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME COMPDS., SB SUB2 SE SUB3, INSE, AND CUSBSE SUB2 HAVE BEEN STUDIED WHICH HAVE RELATIVELY LOW ELEC. CONDS. (IS SMALLER THAN 100 MHO-CM) IN THE LIQ. STATE. EXPTL. RESULTS ABOVE AND BELOW THE M.P. ARE REPORTED AND DISCUSSED FOR THE ELEC. COND., HALL COEFF., THERMOPOWER AND THE THERMAL COND. RESULTS OF A STUDY OF THE THERMAL MOTION OF LIQ. AND SOLID GA BY NEUTRON SCATTERING ARE ALSO PRESENTED.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--SELECTION RULE FOR THE INELASTIC SCATTERING OF NEUTRONS IN CRYSTALS HAVING THE WURTZITE STRUCTURE -U-

AUTHOR-(02)-USOV, O.A., KOTOV, B.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(5), 830-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEUTRON SCATTERING, INELASTIC SCATTERING, GROUP THEORY, CRYSTAL STRUCTURE, SELECTION RULE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1002 STEP NO--UR/0449/70/004/005/0830/0836

CIRC ACCESSION NO--AP0136429

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136429

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GROUP THEORY METHODS WERE USED TO OBTAIN SELECTION RULES FOR THE INELASTIC SCATTERING OF NEUTRONS IN CRYSTALS WITH THE WURTZITE STRUCTURE. THE SELECTION RULES FOR ALL POLYTYPES OF THE WURTZITE STRUCTURE ARE DETD. BY THE POLYTYPE WITH THE SMALLEST UNIT CELL, I.E. 2H. FACILITY: INST. POLUPROV., LENINGRAD, USSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC 541.15

KOTOV, B. V., PRAVEDNIKOV, A. N., Physico-Chemical Institute, im. Karpov

"Competition in Charge Capture by Additives in Gamma-Irradiated Polyvinyl Chloride"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 1, 1971, pp 134-137

Abstract: Studies of recent years have shown quite convincingly the important role played by the transfer and capture of charges in the nonadditive effects of radiation chemistry (usually joined under the term "energy transfer"); yet only little attention has been given to the behavior of the additives of donors and acceptors of electrons existing in irradiated polymers, despite the obvious importance of such research, both in the study of radioprotectors and for better understanding of radiation processes in polymers.

The present study was aimed at the competition between donors and acceptors in various combinations, in polyvinyl chloride irradiated

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USSR

KOTOV, B. V., et al, Doklady Akademii Nauk SSSR, Vol 198, No 1, 1971, pp 134-137

at 77°K. Both low-temperature electron spectroscopy and (to a smaller extent) electron magnetic resonance were used. Graphic and tabular data on ion-radical absorption spectra, relationship of ion-radical formation to dose, various electron paramagnetic spectra, and the relative concentrations of the tetracyanoquinodimethane and tolylamine radicals in a polyvinal chloride sample during photoionization and γ-radiolysis, accompany the paper.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--TRANSUBILICAL INFUSION OF MEDICINAL SOLUTIONS AND BLOOD -U-

AUTHOR--OSTROVERKHOV, G.YE., NIKOLSKIY, A.D., KOTOV, I.A., KOMAROV, I.A., MURASHOVA, Z.M.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 1, PP 59-62

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VEIN, LIVER, HEMODYNAMICS, HEART, MEDICINE, BLOOD, ABDOMEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1977/1696 STEP NO--UR/0531/70/000/001/0059/0062

CIRC ACCESSION NO--APO044841

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--INTRODUCTION OF MEDICINAL SUBSTANCES THROUGH THE UMBILICAL VEIN IN THE TREATMENT OF HEPATIC ABSCESSES -U-

AUTHOR-(04)-OSTROVERKHOV, G.YE., NIKOLSKIY, A.O., KOTOV, I.A., MURASHEVA, Z.M.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 75-79

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VEIN, LIVER, ANTIBIOTIC DRUG EFFECT, DIAGNOSTIC METHODS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1229 STEP NO--UR/0531/70/000/004/0075/0079

CIRC ACCESSION NO--AP0054124

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 019

CIRC ACCESSION NO--AP0054124

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS ANALYZE THE RESULTS OF TRANSUMBILICAL INJECTION OF ANTIBIOTICS AND OTHER SUBSTANCES IN 8 PATIENTS WITH ABSCESSES OF THE LIVER, 6 OF WHOM RECOVERED. IN PATIENTS WITH HEPATIC ABSCESSES THE AUTHORS RECOMMEND THE USE CANNULIZATION OF THE UMBILICAL VEIN FOR DIAGNOSTIC PORTOHEPATOGRAPHY AND SUBSEQUENTLY FOR PROLONGED INTRAPORTAL INFUSION OF MEDICINAL SUBSTANCES AS A SEPARATE METHOD OF TREATMENT OR IN COMBINATION WITH OPENING AND DRAINAGE OF ABCESSES. THE THEORETICAL SUBSTANTIATION OF THE EMPLOYMENT OF TRANSUMBILICAL INJECTION OF ANTIBIOTICS AND DRUGS IN THE TREATMENT OF PATIENTS WITH PYOGENIC ABSCESSES OF THE LIVER WITH THE AID OF MICROBIOLOGICAL TECHNIQUES THE AUTHORS DEMONSTRATE BY THE FACT OF GREATER CONCENTRATION OF DRUGS IN THE ZONE OF THE PATHOLOGICAL FOCUS, THUS ENSURING A MORE PRONOUNCED CURATIVE EFFECT.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--REFRACTORY MIXTURE FOR LINING THE IRON TROUGHS OF BLAST FURNACES -U-

AUTHOR-(05)-PRYADKO, V.M., KOTOV, K.I., MAGALA, V.S., ZHAR, A.M., TKACH, I.T.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,135

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, REFRACTORY MATERIAL, METALLURGIC PATENT, TECHNICAL STANDARD/(U)GOST TSNTU446954 REFRACTORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1060 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130095

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130095

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REFRACTORY MIXT. CONTG. A FILLER AND BINDER HAS THE FOLLOWING COMPN. (IN KG-M PRIMED): CRUSHED HIGH ALUMINA BRICK (PARTICLE SIZE FRACTION 0.15-5 MM) 500-600, CRUSHED HIGH ALUMINA BRICK (PARTICLE SIZE 5-10 MM) 900-1000, CRUSHED ALUMINA BRICK (PARTICLE SIZE SMALLER THAN 0.09 MM) 400-500, FE FREE ZR (ACCORDING TO GOST TSMTU 4469 54) 200-50, AND 80PERCENT PHOSPHORIC ACID 180-200 L.-M PRIME3. FACILITY: DNEPROPETROVSK CONSTRUCTION ENGINEERING INSTITUTE AND PETROVSKII, G. I. METALLURGICAL PLANT, DNEPROPETROVSK.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133003

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE EXPTL. SMELTING IN A BLAST FURNACE, A CHARGE CONTG. 10PERCENT BRIQUETTED COKE WAS USED. THE COKE SHOWED MECH. STRENGTHS, M SUB40 EQUALS 85-93PERCENT, M SUB10 EQUALS 3.4-8.8PERCENT, AND CONTAINED S 1.25-1.80, ASH 5.81-10.6, AND MOISTURE 5.8-10.6PERCENT. THE PROCESS PARAMETERS OBTAINED WERE COMPARED WITH THOSE OBTAINED WITH THE USE OF THE USUAL COKE. THE PIG IRON PRODUCED SHOWED NORMAL MN AND S AND SOMEWHAT HIGHER SI CONCNS. (0.81, 0.040, AND 0.92PERCENT, RESP). THE BRIQUETTED COKE ON CHARGING SHOWED SUFFICIENT STRENGTH AND DID NOT FORM A BREEZE. THE LENGTH OF THE OXIDIZING ZONE IN THE FURNACE WAS 1000 MM, AND CO DISAPPEARED AT 250-500 MM FROM THE MOUTH OF TUYERE. MAX. TEMPS. IN THE HEARTH AND BOSH WERE 1845 AND 1380DEGREES, RESP., AND THOSE OF THE PIG IRON AND SLAG AT THEIR TAP HOLES WERE 1515 AND 1580DEGREES, RESP. A CHARGE CONTG. 50PERCENT BRIQUETTEE COKE DOES NOT CAUSE ANY COMPLICATIONS IN THE OPERATION OF THE FURNACE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PROPERTIES OF COMBINED POLYAMIDE AND PHENOL FORMALDEHYDE RESINS. 2. WATER RESISTANCE OF BONDS FORMED BY MELTS OF COMBINED RESINS -U-

AUTHOR-(04)-MARCHENKO, L.N., SKINYUK, M.A., SOROKINA, N.S., KUTOV, M.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEGK. PROM. 1970, (1), 64-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYAMIDE RESIN, PHENOL FORMALDEHYDE RESIN, WATERPROOFING, ADHESIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1107 STEP NO--UR/0323/70/000/001/0064/0068

CIRC ACCESSION NO--AT0134723

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134793

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESISTANCE TO WATER OF THE TITLE ADHESIVES OBTAINED BY THE COMBINATION (AT 200DEGREES IN N) OF POLYAMIDE AND PHENOL HCHO RESINS VARIES NONMONOTONICALLY WITH THE RATIO OF THE RESINS, PASSING THROUGH A MAX. AND A MIN. THE COMPNS. CONTG. 8-15PERCENT PHENOL HCHO RESIN ARE THE MOST STABLE AND RESISTANT TO WATER. THE OPTIMUM BONDING TEMPS. ARE TABULATED. THE PROBABLE MECHANISM OF IMPROVING STABILITY OF ADHESIVES IS DISCUSSED.

FACILITY: KIEV. TEKHNOL. INST. LEGK. PROM., KIEV, USSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--GLUEING COMPOSITION -U-

AUTHOR-(05)-SOROKINA, N.S., KOTOV, M.P., MARCHENKO, L.N., KOVALENKO, R.V., dAKHAREVA, L.T.

COUNTRY OF INFO--USSR

SOURCE--USSR 265,346

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GLUE, CHEMICAL PATENT, ADHESION STRENGTH, LEATHER, POLYAMIDE RESIN, ADIPIC ACID, HEXAMETHYLENE DIAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1460 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128859

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AA0126859
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GLUE WITH INCREASED ADHESION TOWARD MOISTENED LEATHER HAS THE FOLLOWING COMPN. (IN WT.PERCENT). POLYAMIDE RESIN 55-60, PLASTICIZER 1-6, STEARIC ACID 3.5-5.3 OR ADIPIC ACID 3.5-10.5, CONDENSATION PRODUCT OF HEXAMETHYLENEDIAMINE AND ADIPIC ACID 5-15, ROSIN 15-30, AND A STABILIZER 0.2-0.5. FACILITY: KIEV TECHNOLOGICAL INSTITUTE OF LIGHT INDUSTRY.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--STRUCTURAL MECHANICAL PROPERTIES OF CHLOROPRENE LATEX -U-

AUTHOR-(03)-DUKHOTA, V.F., KOTOV, M.P., KUTIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEGK. PROM. 1970, (2), 42-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHLOROPRENE, LATEX, THIXOTROPE, VISCOUS FLOW, VISCOMETER, THERMAL EFFECT, SURFACE ACTIVE AGENT/(U)OPIO SURFACE ACTIVE AGENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1120 STEP NO--UR/0323/70/000/002/0042/0047

CIRC ACCESSION NO--AP0134109
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 030 UNCLASSIFIED PROCESSING DATE--13NOV7C

CIRC ACCESSION NO--AT0134806

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDITIONS OF MECH. DECOMPN. AND THIXOTROPIC RECONSTRUCTION OF CHLOROPRENE LATEX WERE INVESTIGATED. RHEOL. STUDIES OF SOLNS. OF FRESH AND AGED LATEX WERE CARRIED OUT AT 25DEGREES BY MEANS OF A HOEPPLER VISCOMETER. THE EFFECTIVE VISCOSITY OF THE SYSTEMS DIMINISHED CONSIDERABLY WITH INCREASED TEMP. THE DEPENDENCE OF THE VISCOSITY OF THE LATEX ON THE QUANTITY OF THE SURFACTANT OP,10 INTRODUCED INTO THE SYSTEM WAS ALSO STUDIED.

FACILITY: KIEV. TEKHNOL. INST. LEGK. PROM., KIEV, USSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EFFECT OF ORGANOSILICON COMPOUNDS ON THE PROPERTIES OF POLY,METHYL ACRYLATE, COATING FILM -U-

AUTHOR-(04)-IVASHKEVICH, S.L., OLEYNIK, N.N., SOROKINA, N.S., SOTOV, M.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEGK. PROM. 1970, 13(1), 94-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MILITARY SCIENCES

TOPIC TAGS--ORGANOSILICON COMPOUND, POLYMETHYLMETHACRYLATE, LEATHER, FOOTGEAR, SPECIALIZED COATING, PROTECTIVE COATING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1104 STEP NO--UR/0323/70/013/001/0094/0097

CIRC ACCESSION NO--AT0134794

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134794

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ORGANOSILICON COMPDS. USED HAD THE STRUCTURE (NEGATIVE SIHOO-NEGATIVE) SUB3, WHERE R EQUALS ME OR ET. THEY WERE USED IN CONJUNCTION WITH AQ. EMULSIONS OF POLY(ME ACRYLATE) FOR APPLYING A PROTECTIVE COVERING TO THE UPPERS OF LEATHER WORK BOOTS. THEY GAVE IMPROVED RESISTANCE TO WATER AND TO HEAT THAN WAS OBTAINED WITH POLY(ME ACRYLATE) ALONE. COLOR FASTNESS OF THE LEATHER WAS IMPROVED AND SO WAS RESISTANCE TO ABRASION AND TO REPEATED FLEXING.

FACILITY: KIEV. TEKHNOL. INST. LEGK. PROM., KIEV, USSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USE OF HIGHER ALCOHOLS IN RUSSIAN LEATHER PRODUCTION -U-

AUTHOR-(03)-DANISH, L.V., MIKHANOSHA, YE.S., KOTOV, M.P.

CCUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEGK. PROM. 1970, (2), 68-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALCOHOL, LEATHER, INDUSTRIAL PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0951 STEP NO--UR/0323/70/000/002/0068/0069

CIRC ACCESSION NO--AP0124611

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124611

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN INDUSTRIAL TRIALS ON 1000 KG BATCHES, THE NORMAL FATTING MIXT. CONTG. SYNTHETIC FAT 60, FISH OIL 20, TANNING PASTE 15, TAR 5PERCENT, WAS REPLACED BY A MIXT. OF 5:1 HIGHER ALC. KEROSINE. USAGE IN BOTH CASES WAS 20PERCENT OF THE SQUEEZED WT. OF LEATHER, AND TIME OF TREATMENT 2 HR AT 55-60DEGREES. THE EXPTL. BATCHES, CONTG. HIGHER ALCS., WERE SIMILAR TO CONTROL BATCHES ACCORDING TO CHEM. ANAL. AND PHYSICOMECH. TESTS. THEIR WATER PERMEABILITY WAS REDUCED TO HALF THAT OF THE CONTROL BATCHES, AND DRYING TIME, AFTER FATTING, WAS REDUCED BY 25PERCENT. FACILITY: KIEV. TEKHNOL. INST. LEGK. PROM., KIEV, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SOURCES OF ODORS IN RUSSIAN LEATHER PRODUCTION. 2. USE OF PETROLEUM REFINING BY PRODUCTS FOR LIMING CATTLE HIDES -U-

AUTHOR-(05)-DANISH, L.V., KOTOV, M.P., DUSHIN, B.M., ROMAN, A.S., TSIMBALENKO, A.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEGK. PROM. 1970, (1), 83-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PETROLEUM PRODUCT, LEATHER, TECHNICAL STANDARD, SULFUR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0947 STEP NO--UR/0323/70/000/001/0083/0085

CIRC ACCESSION NO--AP0124607

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124607

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY REPLACEMENT DURING LIMING OF CATTLE HIDES OF NA SUB2 S WITH A S CONTG. WASTE PRODUCT OF PETROLEUM REFINING, AND BY REDN. OF THE TIME OF ROTATION OF THE HIDES IN THE DRUM DURING SOAKING AND LIMING, THE AMT. OF ODORIFEROUS LEATHER WAS REDUCED FROM 28.5 TO 5.8PERCENT. THE TOTAL TIME OF LIMING WAS REDUCED FORM 44 TO 31 HR. THE RESULTANT LEATHER, AFTER TANNING, MET THE REQUIREMENTS OF THE ALL UNION STATE STD. FACILITY: KIEV. TAKHNOL. INST. LEGK. PROM., KIEV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--THERMOPLASTIC ADHESIVES -U-

AUTHOR-(05)-SOROKINA, N.S., KOTOV, M.P., KOVALENKO, R.V., MARCHENKO, L.N., BAKHAREVA, L.T.

COUNTRY OF INFO--USSR

SOURCE--KOZH. OBUV. PROM. 1970, 12(2), 52-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--THERMOPLASTIC MATERIAL, ADHESIVE, FOOTGEAR, LEATHER, POLYESTER RESIN, POLYAMIDE COMPOUND/(U)KTILOL POLYESTER GLUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1731 STEP NO--UR/0498/70/012/002/0052/0054

CIRC ACCESSION NO--AP0125352

UNCLASSIFIED

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UNCLASSIFIED PROCESSING DATE--20NOV70

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CIRC ACCESSION NO--AP0125352

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOOTWEAR INDUSTRY LEATHER GLUES, WITH VISCOSITIES OF 300-1500 P AND HARDENING TIMES OF 3-4 SEC, WERE PREPD. BY MODIFYING POLYMERS WITH LOW MOL. WT. COMPDS., E.G. BY THE ADDN. OF HEXAMETHYLENEDIADIPAMIDE TO POLYAMIDES. MODIFIED POLYESTER GLUES (KTILGLS) WERE ALSO PREPD.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF TOTAL X RAY IRRADIATION AND CAFFEINE ON THE EXCRETION OF EXOGENOUS 3 PRIME, 5 PRIME AMP PRIME32 P, 5 PRIME AMP PRIME32 P, AND 3

AUTHOR-(03)-FEDOROV, N.A., ABAKUMOVA, O.YU., KOTOV, N.N.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(2), 307

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--X RAY RADIATION BIOLOGIC EFFECT, URINE, RAT, NUCLEOTIDE, CENTRAL NERVOUS SYSTEM STIMULANT, PHOSPHORUS ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605004/B12 STEP NO--UR/0205/70/010/002/0307/0307

CIRC ACCESSION NO--AP0139608

UNCLASSIFIED

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2/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139608

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF TOTAL X IRRADN. (DOSE NOT GIVEN) AND CAFFEINE ON THE URINARY EXCRETION OF EXOGENOUS 3 PRIME, 5 PRIME, AMP PRIME32 P (I), 5 PRIME (I), 5 PRIME AMP PRIME32 P (II), AND 3 PRIME, 5 PRIME AMP PRIME3 H (III) HAS BEEN STUDIED IN RATS. AN INCREASED RADIOACTIVITY EXCRETION FOLLOWING THE ADMINISTRATION OF I AND III, AND A DECREASED RADIOACTIVITY EXCRETION FOLLOWING THE ADMINISTRATION OF II WAS OBSD. IN IRRADIATED ANIMALS AS WELL AS IN ANIMALS GIVE CAFFEINE. A PORTION OF EXOGENOUS I AND II WAS EXCRETED IN UNCHANGED FORM. QUANT. AND QUAL. DIFFERENCES WERE NOTED IN THE EXCRETION OF RADIOACTIVITY AFTER THE ADMINISTRATION OF LABELED NUCLEOTIDES AND NA US82 H PRIME32 PO SUB4. FACILITY: TSENT. INST. USOVERSH. VARACH., MOSCOW, USSR.

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USSR

KOTOV, N. V., YAVOR, A. A.

"Influence of Boundary Between Layers on Mechanical Properties of Metal Multilayer Composite Materials"

Tr. Volgogr. Politekhn. In-ta [Works of Bolgograd Polytechnical Institute], 1972, No 4, pp 198-206 (Translated from Referativnyy Zhurnal Mekhanika, No 5, 1973, Abstract No 5V 1209, by A. A. Khvostunkov).

Translation: Results of tensile testing of multilayer specimens of a number of steels are discussed. The number of layers varied from 3 to 11 with identical specimen thickness. The strength of multilayer materials of 1Kh18N10T and VKS-1 steels decreases with increasing number of layers, while for two other materials tested the strength first increases, then decreases. The maximum strength in these two cases was that of five-layer specimens. Residual deformation decreased with increasing numbers of layers, the even deformation remaining the same while local deformation in the rupture zone was increasingly localized. This indicates the presence of cracks in the material. Metallography shows that the cracks are located in the areas where the layers are joined.

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KOTOV, N. V., YAVOR, A. A., Tr. Volgogr. Politekhn. In-ta, 1972, No 4, pp 198-206.

The presence of cracks causes the strength to drop as the number of layers increases. 16 biblio. refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC 621.172:62-408.3

PASHKOV, P. O., YAVOR, A. A., SAVCHENKOV, E. A., KOTOV, N. V., SKLYAROV, N. M., MIKHEYEV, A. A., and PLATONOV, A. A., Volograd Polytechnic Institute, All Union Scientific Research Institute of Aviation Materials

"Properties of High-Strength Clad Sheet Steel in Tension"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1973, pp 37-40

Abstract: Specimens of VKS-1 steel, 1.5 mm thick, clad with the corrosion-resistant KhN78T (EI435) alloy, 13-15% of sheet thickness, were tested for mechanical properties by the method: axial tension - static bending - biaxial tension - tensile fracture (crack sensitivity). The investigation results indicate that VKS-1 clad steel possesses higher strength and plasticity in comparison with steel without cladding and higher resistance to rupture. The strength of VKS-1 steel in biaxial tension comes up to maximum values; besides, the strength in axial tension is 20-25% higher than the strength of homogeneous VKS-1 steel. The application of electroslag remelting contributes to increased plasticity under tension for high-strength clad steel, but to a smaller degree than for homogeneous steel. Three figures, two tables, seven bibliographic references.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

B. Graph Theory

USSR

UDC: 519.2

KOTOV, O. A.

"Concerning Cyclic Groups of Automorphisms of Graphs"

Moscow, Kombinator. analiz--sbornik (Combinatorial Analysis--collection of works), vyp. 2, 1972, pp 50-59 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V382 by E. Davydov)

Translation: The following theorems are proved.

Theorem 1. For any cyclic group of substitutions (T) there exists an oriented graph with this group of substituions as a group of automorphisms.

Theorem 2. If the substitution T is such that for all its cycles of the quantity $K_i > 2$ there exists a cycle of the quantity K_j such that the g.c.d. $(K_i, K_j) = d_{ij} \geq 3$, then there exists an unoriented graph with a cyclic group of automorphisms which is generated by substitution T.

Theorem 3. If the substitution T in cyclic representation consists of cycles of identical length, then there exists an unoriented graph with cyclic group of automorphisms generated by T.

Theorem 4. If there exists an unoriented graph with cyclic group

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USSR

KOTOV, O. A., Kombinator. analiz, vyp. 2, 1972, pp 50-59

of automorphisms {T}, then the substitution T in cyclic representation has the following property: for any cycle number i there exists 1) a chain $K_i, K_{i+1}, \ldots, K_{i+l}$ such that the g.c.d. $(K_i, K_{i+1}) \geq 3$ $(l = 1, \ldots, l)$ and the g.c.d. $(K_i, K_{i+l}) \geq 6$ (a chain of the first kind); or 2) a chain $K_i, K_{i+1}, \ldots, K_j, K_{j+1}, K_{j+2}$ such that g.c.d. $(K_i, K_{i+l}) \geq 3$ $(l = 1, \ldots, j)$ and g.c.d. $(K_j, K_{j+1}) =$ g.c.d. $(K_{j+1}, K_{j+2}) = S$, $S = 3, 4, 6$ (a chain of the second kind).

Theorem 5. If the substitution T is such that for any cycle i there exists either a chain of the first kind or a chain of the second kind, and the numbers $t_i = \sum_{i \neq j} \frac{\sigma_{i,j} K_j}{d_{i,j}}$ are all different for at least one set (σ_{ij}), where

$$\sigma_{i,j} = \begin{cases} 1, \ldots, d_i, & \text{if } d_{i,j} \leq 6, \\ 3, \ldots, d_{i,j} - 3, & \text{if } d_{i,j} > 6, \end{cases}$$

then there exists an unoriented graph with cyclic group of automorphisms generated by T.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR UDC: 681.3.045

KOTOV, P. A.

"A Device for Correcting Errors in a Code Combination"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 293243, Division G, filed 14 Apr 69, published 15 Jan 71, pp 164-165

Translation: This Author's Certificate introduces a device for correcting errors in a code combination. The unit contains a shift register, memory cells, inhibit cells, an adder, an error registration unit, coincidence circuits, error detection units and an error counter. As a distinguishing feature of the patent, the device is designed for improved efficiency in detecting and correcting errors in a code combination. The shift register output which corresponds to the integral method of registration of received signals is connected to the input of the first error detection unit, the output of this unit being connected to one input of the second memory cell. The output of this memory cell is connected to the input of the third memory cell. The other input of the third memory cell is connected to the output of the inhibit cell, and the output of the third memory cell is connected through a flip-flop to one input of the second coincidence circuit and to

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USSR

KOTOV, P. A., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 293243

the input of the first memory register. The output of this memory register is connected to the input of a mod-2 adder whose second input is connected to the output of the second coincidence circuit. The output of the mod-2 adder is connected to the input of the second memory register and to the input of the second error detection unit. The output of this error detection unit is connected to one input of the fourth memory cell. The output of the first memory cell is connected to the other input of the second memory cell, and to the input of the error counter. One output of the error counter is connected to the other input of the fourth memory cell, while the other outputs are connected through a commutator to the input of the inhibit cell, to another input of the inhibit cell, and to the input of the error registration device. The output of the error registration device is connected to the other input of the second coincidence circuit.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC 621.391

GORGDNICHIN, N. T., ZAKRASNYANYY, F. D., KOTOV, P. A., METAL'NIKOV, N. I., TSVETKOV, V. A.

"A Device for Forming an 'Interrogate' Signal in Nonredundant Code"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, 1970, p 31, patent No 262153, filed 6 May 68

Abstract: This Author's Certificate introduces a device for forming an "interrogate" signal in nonredundant code in discrete data transmission systems with resolving feedback. The device contains a switching unit, two flip-flops, a frequency-halving divider, a frequency divider for division by seven, a memory cell, an error detection unit and an output transmitter relay. As a distinguishing feature of the patent, high reliability is assured in reception by connecting the outputs of the frequency-halving divider to the two inputs of the first flip-flop, connecting the outputs of the first flip-flop to the inputs of the output transmitter relay, and connecting the output of the transmitter relay to the input of the switching unit. The first output of the frequency divider for division by seven, which corresponds to the first cycle, is connected to the first input of the second flip-flop, while the second output, which corresponds to the third cycle, is connected to the input of the memory cell. The second input of the memory cell is connected to the output of the error detection unit, and the output

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USSR

GORODNICHIN, N. T., et al, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, 1970, p 31, patent No 262153, filed 6 May 68

is connected to the second input of the second flip-flop. The first and second outputs of the second flip-flop are connected to the inputs of the switching unit.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR UDC 539.4.011

KOTOV, P. I., LEBEDEV, V. M., and MERKULOV, V. N., Moscow Aviation Technological Institute

"The Creep of VT-14 Titanium Alloy Under Low-Cycle Load Conditions"

Kiev, Problemy Prochnosti, No 5, May 73, pp 54-57

Abstract: The accumulation process of creep strain and the failure conditions of VT-14 alloy were investigated at low-cycle load in the 2.5-30 cycles/hr frequency range at 400°C. The creep deformation of 1.0%, first resulting under stationary conditions, lowers the deformability of the alloy at subsequent cyclic load. With increasing average stress $\bar{\sigma}$, the time until failure decreases; the change of the durability value depends on $\alpha = \tau_c / \tau_s$, where τ_c and τ_s are the application times of cyclic and static loads. At different $\bar{\sigma}$ levels and by different α values, the creep can have an improving as well a damaging influence on the durability. With increasing deformation frequency, the effect of cyclicity substantially lowers the magnitude of ultimate creep deformation. Six figures, eight bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR UDC: 620.172

MERKULOV, V. N., KOTOV, P. I., LEBEDEV, V. M., Moscow

"Short-term Creep of OT4 Alloy"

Kiev, Problemy Prochnosti, No 11, Nov 72, pp 57-59.

Abstract: This work studies the short-term creep of OT4 titanium sheet alloy as delivered by the manufacturer at temperatures of 400-500 and 600° and at rather high stresses, amounting to 55-100% of the tensile strength. In the 400-600°C temperature range, the short-term creep of OT4 alloy is accompanied by significant hardening. The temperature level at which hardening disappears with short term creep is about 640°C. In the 400-600° temperature level, the short term creep of OT4 alloy can be satisfactorily described by an equation based on the hypothesis of hardening when the hardening measure is the inclined creep deformation.

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USSR UDC 620.172

KOTOV, P. I., LEVEDEV, V. M., MERKULOV, V. N., Moscow

"Creep of Titanium Alloys Under Variable Loads"

Problemy Prochnosti, No 3, 1972, pp 45-49.

Abstract: The creep of titanium alloys VT-14 and VT-20 is studied in the 300-400°C temperature range with variable loads. It is demonstrated that with a stepped loading mode, the accumulation of creep deformations occurs slower than the calculated rate, while with a smoothly increasing load, the predictions of the theory of hardening are satisfactorily accurate. In the case of alternating loads and rests, the elastic after effect appears rather clearly during rest periods.

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USSR UDC 661.183.123.2

KAZAKOV, Ye. V., KOTOV, S. D., OVCHINNIKOVA, N. A.

"Synthesis of Organoferrocyanide Ion-Exchange Resins"

Moscow, Khimicheskaya Promyshlennost', No 1, 1973, pp 12-14

Abstract: A study was made of the synthesis of new ion exchange resins -- organoferrocyanides -- characterized by high selectivity with respect to molecular iodine and ions of the heavy alkali metals. With an increase in the capacity of the unit, the production cost dropped significantly.

The described process includes the following steps: preparation of the initial solutions (dissolving the crystalline salts), preparation of the anion exchange resin (screening out dust and swelling in water), alternate impregnation of the resin with the initial solutions, intermediate flushing of the sorbent with water, and washing the product to remove finely disperse fractions. The experience in operating the described unit shows that the process as a whole is characterized by the magnitude of the resin charge in the reactor column and the time of alternate impregnation of the resin with the initial solutions. The minimum cost is achieved for maximum charge.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

KAZAKOV, Ye. V., et al., Khimicheskaya Promyshlennost', No 1, 1973, pp 12-14

The basic structural materials used were carbon steel St. 3 and alkali and acid resistant steel Kh18N10T.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC 621.391.2

TUZOV, G. I., SNIRIN, V. V., KOTOV, V. A.

"Dynamics of a Filtration System for a Pseudorandom Signal with an Arbitrary Manipulation Angle"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 295-300

Abstract: A study was made of the nonlinear dynamics of a tracking receiver which is optimal for a pseudorandom phase-manipulated signal with an arbitrary manipulation angle described by a system of second order nonlinear dependent differential equations. Using the method of numerical integration of the differential equations, the dynamics of the system and the lock-on band of one of the subsystems of the tracking receiver -- the automatic frequency control circuit -- were determined as functions of the system parameters and initial conditions: the initial phase, the initial delay, the values of the amplification coefficients of the subsystem and the manipulation angle. All these parameters must be considered during initial synchronization of the tracking receiver.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR UDC 621.385.292.8

BABANOV, ZH.N., KOTOV, V.D., KUNIK, S.B.

"Secondary Electron Emitter With Increased Resistance To Electron Bombardment"

V sb. Vopr. elektron.tekhn. (Problems Of Electronics Technology--Collection Of Works), No 2, Saratov, Saratov University, 1971, pp 229-231 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A200)

Translation: The technology of a secondary-emission emitter based on platinum--beryllium oxide was developed in order to increase resistance to electron bombardment. An emission layer 6-8 micrometer thick is deposited by ion-plasma sputtering of the components in an argon atmosphere. The maximum secondary emission coefficient equals 5.5 at an energy of the primary electrons of ~600 V. A.B.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

UDC 669.24 669.018.2

USSR

KOTOV, V. F., KURILO, YU. P., SOMOV, A. I., and SHVARTS, V. I., Physico-technical Institute, Academy of Sciences Ukrainian SSR

"Microstructure and Mechanical Properties of an Eutectic Composition Ni_3Al - Ni_3Nb"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 3, 1973, pp 669-672

Abstract: The aim of this work was to study the effect of controlled crystallization of Ni_3Al - Ni_3Nb alloy on its mechanical properties. Controlled crystallization was applied during drawing of an ingot from a melt in vacuum ($1 - 5 \cdot 10^{-6}$ mm Hg), using a pure crystalline Ni as seed charge. The crystallization rate varied from 21 to 98 mm/hour, with the temperature gradient in the melt from 80 to 150°C/cm. The tensile strength of samples prepared by this method was 140-180 kg/mm^2 at room temperature. Changes in tensile properties were due to variations in the alloy crystal structure, namely, to disorientation of Ni_3Al and Ni_3Nb lamellas. When this disorientation was extensive, the tensile properties decreased to 100 kg/mm^2. Appearance of primary crystals of either Ni_3Al or Ni_3Nb phases decreased the tensile properties to 50-100 kg/mm^2. Tensile properties of samples tested under vacuum conditions were somewhat higher compared with those at room temperature. When the testing temperature was high, this difference amounted to 14 kg/mm^2 at 1100°C. This is attributed

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USSR

KOTOV, V. F., et al, Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 3, 1973, pp 669-672

to oxidation of the alloy in atmospheric oxygen. The stress-rupture strength of samples tested in argon at 1100°C for 100 hours was ~16.5 kg/mm^2, and it was ~ 15 kg/mm^2 and ~24 kg/mm^2 when tested in atmosphere at 1100 and 1000°C, respectively. Mechanical properties of Ni_3Al - Ni_3Nb alloy produced by the controlled crystallization exceeded those of ordinary nickel alloys in many respects.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520008-1

USSR

UDC 669-419.4

KOTOV, V. F., FONSHTEYN, N. M., and SHVARTS, V. I.

"A Heat-Resisting Composite: Nichrome-Tungsten Fiber"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, 1971, pp 20-22

Abstract: The article describes a nichrome-base composite reinforced with tungsten fiber. Minimum contact between the tungsten fibers and liquid nichrome is assured by vacuum impregnation of the set of fibers with the molten metal of the matrix. The vacuum suction setup consists of a vacuum system, an induction melting furnace, and tube furnace for preheating the ring filled with the tungsten wire. The ring is a tube made of 1Kh18N10T steel. The strengthener is wire made of VA tungsten or the alloys VAM-5 and VAR-5, containing 5 percent Mo or rhenium, respectively. Fused ultrapure aluminum oxide (alundum) is suggested as a coating to protect the tungsten wire from dissolution

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